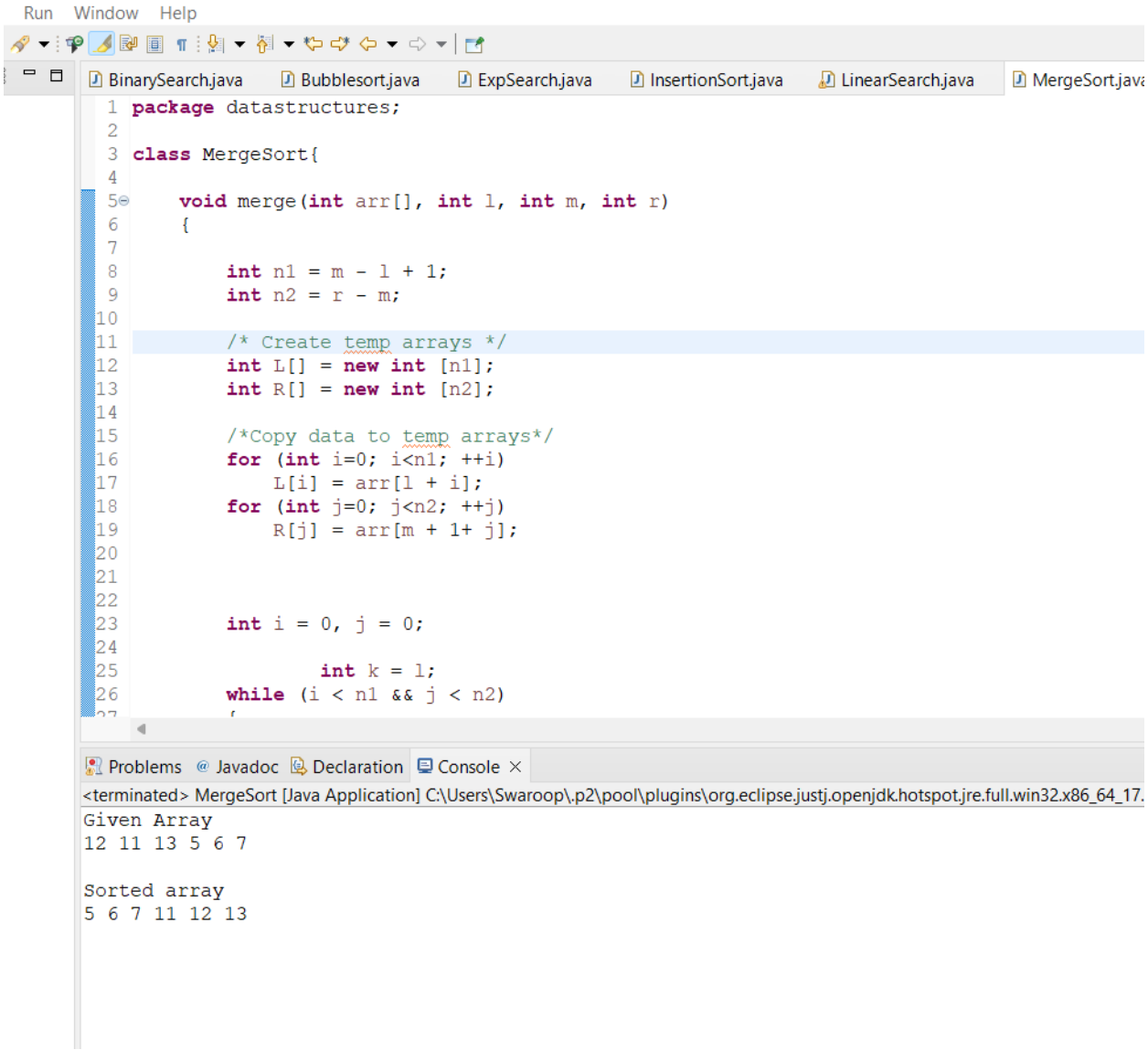
Problem Statement-7

```
package datastructures;
class MergeSort{

   void merge(int arr[], int l, int m, int r)
   {

       int n1 = m - l + 1;
       int n2 = r - m;
       /* Create temp arrays */
       int L[] = new int [n1];
       int R[] = new int [n2];
       /*Copy data to temp arrays*/
       for (int i=0; i<n1; ++i)
           L[i] = arr[l + i];
       for (int j=0; j<n2; ++j)
           R[j] = arr[m + 1+ j];
       int i = 0, j = 0;
               int k = l;
       while (i < n1 && j < n2)
       {
           if (L[i] <= R[j])
           {
               arr[k] = L[i];
               i++;
           }
           else
           {
               arr[k] = R[j];
               j++;
           }
           k++;
       }
       while (i < n1)
       {
           arr[k] = L[i];
           i++;
           k++;
       }

       while (j < n2)
       {
           arr[k] = R[j];
           j++;
           k++;
       }
   }
   void sort(int arr[], int l, int r)
```

```
    {
        if (l < r)
        {

            int m = (l+r)/2;

            sort(arr, l, m);
            sort(arr , m+1, r);

            merge(arr, l, m, r);
        }
    }
        static void printArray(int arr[])
    {
        int n = arr.length;
        for (int i=0; i<n; ++i)
            System.out.print(arr[i] + " ");
        System.out.println();
    }
    // Driver method
    public static void main(String args[])
    {
        int arr[] = {12, 11, 13, 5, 6, 7};
        System.out.println("Given Array");
        printArray(arr);
        MergeSort ob = new MergeSort();
        ob.sort(arr, 0, arr.length-1);
        System.out.println("\nSorted array");
        printArray(arr);
    }
}
```


Run Window Help
BinarySearch.java
Bubblesort.java
ExpSearch.java
InsertionSort.java
LinearSearch.java
MergeSort.java
1 package datastructures;
2
3 class MergeSort{
4
5 void merge(int arr[], int l, int m, int r)
6 {
7
8 int n1 = m - l + 1;
9 int n2 = r - m;
10
11 /* Create temp arrays */
12 int L[] = new int [n1];
13 int R[] = new int [n2];
14
15 /*Copy data to temp arrays*/
16 for (int i=0; i<n1; ++i)
17 L[i] = arr[l + i];
18 for (int j=0; j<n2; ++j)
19 R[j] = arr[m + 1+ j];
20
21
22
23 int i = 0, j = 0;
24
25 int k = l;
26 while (i < n1 && j < n2)
Problems
Javadoc
Declaration
Console
<terminated> MergeSort [Java Application] C:\Users\Swaroop\.p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_17.
Given Array
12 11 13 5 6 7
Sorted array
5 6 7 11 12 13